

# Multiscale Modeling, Analysis, and Simulation

## A SIAM Interdisciplinary Journal

SIAM will launch a new interdisciplinary journal that focuses on multiscale analysis, modeling, and simulation. This is an emerging new research area which has already had a significant impact on many scientific disciplines, including biology, chemistry, environmental science, fluid dynamics, geophysics, information science, and materials science. There have been many exciting recent, but problem-specific, advances in multiscale analysis, modeling, and simulation. Despite considerable progress in a wide range of the sciences, and a growing awareness of the importance of multiscale approaches, currently there is fragmentation in multiscale methodology, its rigorous analysis, and its applications. Breakthroughs in specific domains could be applicable in a broader context, but remain isolated. As a result, multiscale descriptions are nowhere near their potential level of impact, including in education and industry. Creating a multiscale journal will integrate these isolated efforts and diverse developments, and provide a unique opportunity to make significant advances. Such a journal will also provide a special opportunity to connect domain experts from biology, chemistry, environmental science, geophysics, information science, fluids, and materials science with specialists in mathematical and computational analysis. This will help bridge the gap in research, education and knowledge transfer between mathematics, biology, chemistry, computer science, engineering, physics, and other disciplines.

The new journal will be officially launched in January, 2002. The first issue of the journal will appear in March, 2003. The intended audience of the journal will go beyond the traditional applied mathematicians and include people from physics, engineering, and science. MMAS is an interdisciplinary journal with a focus on the fundamental modeling and computational principles in various multiscale problems. The journal will consider papers from a broad range of application areas that use multiscale methods, including biology, chemistry, fluid dynamics, geophysics and environmental science, information science, and materials science.

The journal also features survey articles in various subfields. Surveys will be pedagogical and jargon-limited. They would provide the essence of each type of approach in each subfield, and explain the most important current issues, challenges and opportunities. The purpose of these survey articles is to convey the essential information in a subfield to a broad audience and to foster cross-disciplinary collaborations.